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**UTILITY  
PATENT APPLICATION  
TRANSMITTAL**

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.

1-25111

First Inventor

Yuhong Zheng et al.

Title

BOUNDARY AUTO-CALIBRATION SCHEME ETC.

Express Mail Label

EV 399902491 US

**APPLICATION ELEMENTS**

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO:

Mail Stop Patent Application  
Commissioner for Patents  
P. O. Box 1450  
Alexandria VA 22313-1450

- 1.
- ☒
- Fee Transmittal Form (e.g., PTO/SB/17)
- 
- (Submit an original, and a duplicate for fee processing)

- 2.
- ☐
- Applicant claims small entity status.
- 
- See 37 CFR 1.27.

- 3.
- ☒
- Specification [Total Pages
- 40**
- ]
- 
- (preferred arrangement set forth below)

- Descriptive title of the invention
- Cross Reference to Related Applications
- Statement Regarding Fed sponsored R & D
- Reference to sequence listing, a table, or a computer program listing appendix
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Drawings (if filed)
- Detailed Description
- Claim(s)
- Abstract of the Disclosure

- 4.
- ☒
- Drawing(s) (35 U.S.C. 113) [Total Sheets
- 10**
- ]

5. Oath or Declaration [Total Pages
- 2**
- ]

- a. ☒ Newly executed (original or copy)
- b. ☐ Copy from a prior application (37 CFR 1.63(d))  
(for continuation/divisional with Box 18 completed)

- i. ☐ **DELETION OF INVENTOR(S)**  
Signed statement attached deleting inventor(s)  
named in the prior application, see 37 CFR  
1.63(d)(2) and 1.33(b).

- 6.
- ☐
- Application Data Sheet. See 37 CFR 1.76

- 7.
- ☐
- CD-ROM or CD-R in duplicate, large table or
- 
- Computer Program (Appendix)

8. Nucleotide and/or Amino Acid Sequence Submission
- 
- (if applicable, all necessary)

- a. ☐ Computer Readable Form (CRF)
- b. Specification Sequence Listing on:  
i. ☐ CD-ROM or CD-R (2 copies); or  
ii. ☐ Paper
- c. ☐ Statements verifying identity of above copies

**ACCOMPANYING APPLICATION PARTS**

9. ☒ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney  
(when there is an assignee)
11. ☐ English Translation Document (if applicable)
12. ☒ Information Disclosure Statement (IDS)/PTO-1449 ☒ Copies of IDS Citations
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s)  
(if foreign priority is claimed)
16. ☐ Nonpublication Request under 35 U.S.C. 122  
(b)(2)(B)(i). Applicant must attach form PTO/SB/35  
or its equivalent.
17. ☐ Other:

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☒ Continuation-in-part (CIP) of prior application No.: **PCT/US02/30962**

Prior application information:

Examiner

Group / Art Unit:

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

**19. CORRESPONDENCE ADDRESS**

Customer Number:

**04859**or ☐ Correspondence address below

Name

Address

City

State

Zip Code

Country

Telephone

Fax

Name (Print/Type)

Shital A. Shah

Registration No. (Attorney/Agent)

47,073

Signature



Date

March 18, 2004

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

031804

16085 U.S. PTO

22857 U.S. PTO  
10/803343

031804

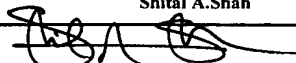
# DUPLICATE

PTO/SB/17 (10-03)  
Approved for use through 07/31/2006. OMB 0651-0032  
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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<h2 style="margin: 0;">FEE TRANSMITTAL</h2> <h3 style="margin: 0;">for FY 2004</h3> <p style="font-size: small; margin: 0;">Effective 10/01/2003. Patent fees are subject to annual revision.</p>		<b>Complete if Known</b>	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27		Application Number	
		Filing Date	
		First Named Inventor	
		Examiner Name	
		Art Unit	
TOTAL AMOUNT OF PAYMENT (\$)		\$828.00	
		Attorney Docket No. 1-25111	

METHOD OF PAYMENT (check all that apply)	FEE CALCULATION (continued)																																																																																																																																																																																																																																																																																																																		
<input type="checkbox"/> Check <input type="checkbox"/> Credit card <input type="checkbox"/> Money Order <input type="checkbox"/> Other <input type="checkbox"/> None <input checked="" type="checkbox"/> Deposit Account: Deposit Account Number: <b>MacMillan, Sobanski &amp; Todd LLC</b> Deposit Account Name: <b>11-0417</b> The Director is authorized to: (check all that apply) <input checked="" type="checkbox"/> Charge fee(s) indicated below <input checked="" type="checkbox"/> Credit any overpayments <input checked="" type="checkbox"/> Charge any additional fee(s) or any underpayment of fee(s) <input type="checkbox"/> Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.	<h3>3. ADDITIONAL FEES</h3> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Large Entity</th> <th colspan="2">Small Entity</th> <th rowspan="2">Fee Description</th> <th rowspan="2">Fee Paid</th> </tr> <tr> <th>Fee Code</th> <th>Fee (\$)</th> <th>Fee Code</th> <th>Fee (\$)</th> </tr> </thead> <tbody> <tr><td>1051</td><td>130</td><td>2051</td><td>65</td><td>Surcharge - late filing fee or oath</td><td></td></tr> <tr><td>1052</td><td>50</td><td>2052</td><td>25</td><td>Surcharge - late provisional filing fee or cover sheet</td><td></td></tr> <tr><td>1053</td><td>130</td><td>1053</td><td>130</td><td>Non - English specification</td><td></td></tr> <tr><td>1812</td><td>2,520</td><td>1812</td><td>2,520</td><td>For filing a request for <i>ex parte</i> reexamination</td><td></td></tr> <tr><td>1804</td><td>920*</td><td>1804</td><td>920*</td><td>Requesting publication of SIR prior to Examiner action</td><td></td></tr> <tr><td>1805</td><td>1,840*</td><td>1805</td><td>1,840*</td><td>Requesting publication of SIR after Examiner action</td><td></td></tr> <tr><td>1251</td><td>110</td><td>2251</td><td>55</td><td>Extension for reply within first month</td><td></td></tr> <tr><td>1252</td><td>420</td><td>2252</td><td>210</td><td>Extension for reply within second month</td><td></td></tr> <tr><td>1253</td><td>950</td><td>2253</td><td>475</td><td>Extension for reply within third month</td><td></td></tr> <tr><td>1254</td><td>1,480</td><td>2254</td><td>740</td><td>Extension for reply within fourth month</td><td></td></tr> <tr><td>1255</td><td>2,010</td><td>2255</td><td>1,005</td><td>Extension for reply within fifth month</td><td></td></tr> <tr><td>1401</td><td>330</td><td>2401</td><td>165</td><td>Notice of Appeal</td><td></td></tr> <tr><td>1402</td><td>330</td><td>2402</td><td>165</td><td>Filing a brief in support of an appeal</td><td></td></tr> <tr><td>1403</td><td>290</td><td>2403</td><td>145</td><td>Request for oral hearing</td><td></td></tr> <tr><td>1451</td><td>1,510</td><td>1451</td><td>1,510</td><td>Petition to institute a public use proceeding</td><td></td></tr> <tr><td>1452</td><td>110</td><td>2452</td><td>55</td><td>Petition to revive - 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EXTRA CLAIM FEES FOR UTILITY AND</h3> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Extra Claims</th> <th colspan="2">Fee from below</th> <th rowspan="2">Fee Paid</th> </tr> <tr> <th>Total Claims</th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>21</td> <td>-20** =</td> <td>1</td> <td>X 18.00 =</td> <td>18.00</td> </tr> <tr> <td>3</td> <td>-3** =</td> <td>0</td> <td>X 86.00 =</td> <td>0.00</td> </tr> <tr> <td colspan="5">Multiple Dependent</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Large Entity</th> <th colspan="2">Small Entity</th> <th rowspan="2">Fee Description</th> <th rowspan="2">Fee Paid</th> </tr> <tr> <th>Fee Code</th> <th>Fee (\$)</th> <th>Fee Code</th> <th>Fee (\$)</th> </tr> </thead> <tbody> <tr><td>1202</td><td>18</td><td>2202</td><td>9</td><td>Claims in excess of 20</td><td></td></tr> <tr><td>1201</td><td>86</td><td>2201</td><td>43</td><td>Independent claims in excess of 3</td><td></td></tr> <tr><td>1203</td><td>290</td><td>2203</td><td>145</td><td>Multiple dependent claim, if not paid</td><td></td></tr> <tr><td>1204</td><td>86</td><td>2204</td><td>43</td><td>** Reissue independent claims over original patent</td><td></td></tr> <tr><td>1205</td><td>18</td><td>2205</td><td>9</td><td>** Reissue claims in excess of 20 and over original patent</td><td></td></tr> <tr> <td colspan="2" style="text-align: right;">SUBTOTAL (2)</td> <td colspan="2" style="text-align: center;">(\$)</td> <td colspan="2" style="text-align: center;">\$18.00</td> </tr> </tbody> </table> <p>**or number previously paid, if greater; For Reissues, see above</p>	Large Entity		Small Entity		Fee Description	Fee Paid	Fee Code	Fee (\$)	Fee Code	Fee (\$)	1001	770	2001	385	Utility filing fee	770.00	1002	340	2002	170	Design filing fee		1003	530	2003	265	Plant filing fee		1004	770	2004	385	Reissue filing fee		1005	160	2005	80	Provisional filing fee		SUBTOTAL (1)		(\$)		\$770.00		Extra Claims		Fee from below		Fee Paid	Total Claims				21	-20** =	1	X 18.00 =	18.00	3	-3** =	0	X 86.00 =	0.00	Multiple Dependent					Large Entity		Small Entity		Fee Description	Fee Paid	Fee Code	Fee (\$)	Fee Code	Fee (\$)	1202	18	2202	9	Claims in excess of 20		1201	86	2201	43	Independent claims in excess of 3		1203	290	2203	145	Multiple dependent claim, if not paid		1204	86	2204	43	** Reissue independent claims over original patent		1205	18	2205	9	** Reissue claims in excess of 20 and over original patent		SUBTOTAL (2)		(\$)		\$18.00		<h3>3. 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SUBMITTED BY		Complete (if applicable)	
Name (Print/Type)	Shital A. Shah	Registration No. (Attorney/Agent)	47,073
Signature		Telephone	(419) 255-5900
		Date	March 18, 2004

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This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**CERTIFICATE OF MAILING BY "EXPRESS MAIL" (37 CFR 1.10)**

Applicant(s): Yuhong Zheng et al.

Docket No.

1-25111

Serial No.

Filing Date  
Herewith

Examiner

Group Art Unit

Invention:

**BOUNDARY AUTO-CALIBRATION SCHEME FOR PROPORTIONAL  
POPPET VALVE PRESSURE CONTROL**

I hereby certify that the following correspondence:

**Utility Patent Application which includes a 40 page Specification, 10 sheets of Drawings, Executed  
Declaration and Assignment, an Information Disclosure Statement and a Return Postcard***(Identify type of correspondence)*

is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37  
CFR 1.10 in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

March 18, 2004.*(Date)*Toni Bosch*(Typed or Printed Name of Person Mailing Correspondence)*Toni Bosch*(Signature of Person Mailing Correspondence)*EV 399902491 US*("Express Mail" Mailing Label Number)***Note: Each paper must have its own certificate of mailing.**